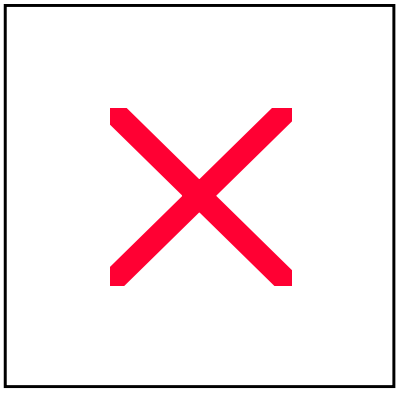

OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT

Annual Evaluation Report

for the

Regulatory and Abandoned Mine Land Reclamation Programs

Administered by the State

of

Texas

for

Evaluation Year 2004

(July 1, 2003, through June 30, 2004)

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I. Introduction

The Surface Mining Control and Reclamation Act of 1977 created the Office of Surface Mining Reclamation and Enforcement in the Department of the Interior. SMCRA provides authority to OSM to oversee the implementation of and provide Federal funding for State regulatory programs that have been approved by OSM as meeting the minimum standards specified by SMCRA. This report contains summary information regarding the Texas program and the effectiveness of the Texas program in meeting the applicable purposes of SMCRA as specified in Section 102. The evaluation period covered by this report is July 1, 2003, to June 30, 2004.

The primary focus of OSM's oversight policy is an on-the-ground results-oriented strategy that evaluates the end result of State program implementation, i.e., the success of the State programs in ensuring that areas off the minesite are protected from impacts during mining, and that areas on the minesite are contemporaneously and successfully reclaimed after mining activities are completed. The policy emphasizes a shared commitment between OSM and the States to ensure the success of SMCRA through the development and implementation of a performance agreement. Also, public participation is encouraged as part of the oversight strategy. Besides the primary focus of evaluating end results, the oversight guidance makes clear OSM's responsibility to conduct inspections to monitor the State's effectiveness in ensuring compliance with SMCRA's environmental protection standards.

OSM's oversight guidance emphasizes that oversight is a continuous and ongoing process. To further the idea of continuous oversight, this annual report is structured to report on OSM's and Texas' progress in conducting evaluations and completing oversight activities, and on their accomplishments at the end of the evaluation period. Detailed background information and comprehensive reports for the program elements evaluated during the period are available for review and copying at the Office of Surface Mining, Tulsa Field Office, 5100 E. Skelly Drive, Suite 470, Tulsa, Oklahoma 74135-6547.

The following acronyms are used in this report:

AML	Abandoned Mine Land Reclamation
AMLIS	Abandoned Mine Land Inventory System
AOC	Approximate Original Contour
ATP	Authorization to Proceed
AVS	Applicant Violation System
EPA	Environmental Protection Agency
EY	Evaluation Year
FONSI	Findings of No Significant Impact
OSM	Office of Surface Mining Reclamation and Enforcement
RCT	Railroad Commission of Texas, Surface Mining and Reclamation Division
SMCRA	Surface Mining Control and Reclamation Act of 1977

TCEQ	Texas Commission on Environmental Quality
TPDES	Texas Pollution Discharge Elimination System
TDN	Ten-Day Notice
TFO	Tulsa Field Office
TIPS	Technical Information Processing System

II. Overview of the Texas Coal Mining Industry

The near-surface coal deposits (200 feet) in Texas are about 97 percent lignite. The remainder is bituminous coal. The potential coal reserves are 23.37 billion tons of lignite and 787 million tons of bituminous coal. The sulfur content ranges from .7 to 1.5 percent for lignite and 1.4 to 3.6 percent for the bituminous coal. Cannel coal is mined on three South Texas mines and has an average sulfur content of 2.2 percent. The coal seams mined in Texas average about 8 feet in thickness.

In the 1840's the first bituminous coal was mined along the Trinity River of Texas. As early as 1850, lignite was produced and used. Coal from both lignite and bituminous deposits was used by the railroads until the 1920's. In 1917, coal production in Texas was about 2.5 million tons, with approximately equal amounts of lignite and bituminous coal. From 1918 until 1950, only 18,000 tons of lignite were produced. In 1954, a lignite-fueled electric power-generating plant near Rockdale, Texas opened. Following that, annual coal production increased rapidly to meet the demand for electric power generation at additional plants. In 2003, nearly 48 million tons of lignite and bituminous coal were produced in Texas from large surface mines using large equipment such as bucket-wheel excavators and cross pit spreaders in addition to draglines, scrapers, loaders, and trucks. Over 99.5 percent of the production was lignite.

Most of the lignite production is used in the generation of electric power within the State. The lignite from one mine is used to produce activated carbon. The bituminous production has been used intrastate by the cement, lime and light-weight aggregate industry to fire kilns, and boilers. The cannel coal mined near Laredo, Texas, has been exported to Europe for fireplace coal, to South America for generation of electricity, and used within the State by various industries such as cement production. Texas is the Nation's fifth ranked coal-producing State and the largest lignite producer in the world. Daily employment at the 21 permitted operations exceeds 2,000.

Climate is not a limiting factor for reclamation in Texas, although the permits near Laredo and Eagle Pass are west of the 100^{th} meridian and use a 10-year extended responsibility period for bond release. Some mines have encountered acid-forming materials in the overburden that has complicated reclamation activities. In areas, where topsoil substitution is used, selective overburden handling techniques have proven successful.

III. Overview of the Public Participation Opportunities in the Oversight Process and the State Program

OSM published in its Directive on Oversight of State Programs (REG-8) a statement that customer service was an integral and important part of the implementation of an approved State program. The oversight guidance calls for evaluating the State's performance on customer service annually. The aspects of customer service that are to be evaluated are: handling of citizen's complaints; permitting actions; bond releases; lands unsuitable petitions; administrative and judicial review; and AVS determinations. In the 2003 Performance Agreement, TFO and the State Regulatory Authority, RCT, agreed that in EY 2004, TFO would evaluate handling of citizen's complaints and permitting actions. RCT uses the State of Texas administrative procedures, which call for formal hearings and records on all significant actions.

RCT provides for public input into the State program through several avenues. Citizens may comment on permit applications, be party to the proceedings, comment on amendments to the State program, or file complaints on mining operations.

Throughout EY 2004, TFO reviewed RCT's performance on customer service, looking at citizen's complaints and permitting actions. The following findings and conclusions resulted from the study:

Permitting Actions: Both of the permitting actions that were reviewed showed that the applicants had published a notice that the application was available for public review and comment. RCT received comments on both applications and asked the applicants to address the comments. On all comments, the applicants explained how the commenters' concerns were being addressed in the permit application. None of the files contained further correspondence relating to the comments, which would imply that the commenters had been satisfied by the response to their comments.

Citizen's Complaints: In every citizen's complaint, even telephone complaints, RCT responded promptly in writing to the complainant and offered confidentiality. Six of the eight complaints were concerns about groundwater. Of the six, three were determined not mining related, one could not be identified as a problem, and two were resolved through company actions. One complaint was for a dust problem. On that one, RCT found no problem on its inspections, but the company changed its road-watering procedures to correct the dust problem. One complaint was for an off-site sediment problem, which prompted RCT to cite a violation. In each case, RCT met with the complainant and inspected the site. RCT responded promptly with its findings and disposition of each complaint. RCT also provided information to each complainant on appealing the findings.

RCT appropriately provided for public participation on every aspect that was reviewed. All citizen's complaints were handled in accordance with the approved State program.

IV. Major Accomplishments/Issues/Innovations in the Texas Program

A. Regulatory Program

During EY 2004, RCT successfully operated its regulatory program so that there were no significant adverse environmental impacts from coal mining in Texas.

Beginning late in EY 2003 and continuing through EY 2004, RCT met with Texas Mining and Reclamation Association to identify potential improvements in the coal mining and reclamation regulatory climate and activities. The result of the series of discussions was that RCT could streamline its review processes and the coal mine operators could ensure that their applications and materials were more complete and accurate to facilitate efficient review. One outcome was a proposed amendment of the approved State regulatory program that would allow some changes in mining activities on permitted mines without the need for permit revisions. That proposed amendment was submitted to OSM and is still pending. (See the discussion of TX-052 on Page 5).

During EY 2004, RCT subdivided several of the large area permits into smaller inspectible units. The purpose of the smaller inspectible units was to allow more timely completion of inspections.

TXU Mining Company's Monticello Mine received one of OSM's National Awards for outstanding reclamation. At this mine, reclamation has shifted from predominantly agriculture to trees and native vegetation, resulting in the wildlife habitat becoming a significant percentage of the land use.

B. Abandoned Mine Land Reclamation Program

On June 23, 1980, the Secretary of the Interior approved Texas' AML reclamation plan under Title IV of SMCRA. Texas had completed reclamation on all inventoried coal related sites and was certified to use AML funds for the reclamation of noncoal abandoned mine lands. The Texas AML program has a full-time staff of 8 and operated on an AML grant of $189,787.

During EY 2004 the AML program completed hazard abatement at one underground coal mine site that consisted of stabilizing and filling 11 Priority subsidence features and 1 Priority 2 portal. Some of the features were open to the underground workings. RCT also initiated construction to close 28 Priority 2 underground mine openings related to cinnabar extraction in Presidio County,

located in west Texas. Work continued on a regrade project at an open pit uranium mine and temporary vegetative cover was planted at another.

Late in the evaluation period OSM issued a FONSI and ATP for one relatively small open pit uranium reclamation project. Construction is scheduled to start in the late summer or early fall of 2004.

RCT followed standard construction practices using State contracting procedures. OSM's inspections of construction projects found RCT completed projects in a manner consistent with its approved reclamation plan with projects meeting design goals. AVS checks were made on successful bidders. RCT was in compliance with storm water discharge requirements and properly implemented interagency/intergovernmental coordination. The approved plan was followed for obtaining necessary rights-of-entry. The State AML program has worked cooperatively with OSM to make necessary changes to the State's approved reclamation plan.

In September 2003, the U.S. Department of the Interior Office of Inspector General released an audit report on the inventory system and performance results of the AML Program. As part of OSM's response to the Inspector General's findings concerning problems with data in AMLIS, OSM requested RCT provide it with a signed certification that it has a system in place or a schedule for development and implementation of a system that ensures the accuracy of data entered into AMLIS. RCT did not provide the information by the date specified in OSM's request, however indicated the certification would be completed during the first quarter of EY 2005.

C. Program Amendments

TX-051. On October 3, 2003, OSM received an informal amendment from RCT to revise its rules and add new rules pertaining to the use of coal combustion products and by-products in reclamation. OSM commented on this informal amendment and received a formal amendment on December 15, 2003. On February 3, 2004, OSM announced in the *Federal Register* the opening of a public comment period on the proposed program amendment. In response to numerous requests for a public hearing on the proposed amendment, OSM held a hearing in Austin, Texas, on March 1, 2004. On May 7, 2004, OSM sent a letter to RCT explaining the concerns that arose from OSM’s review of the amendment and from the public comments. On May 26, 2004, RCT responded with a letter stating that it would respond to OSM’s concerns at a later date.

TX-052. On December 29, 2003, OSM received a proposed program amendment from RCT revising the rules on permit revisions. OSM announced the proposed amendment and opened a public comment period with the

publication of a *Federal Register* notice on February 9, 2004. OSM received a request for a public hearing and held a public meeting in Mt. Pleasant, Texas, on March 11, 2004. OSM sent a letter to RCT on April 19, 2004, explaining the concerns that arose from OSM's review of the proposed amendment and from the public comments. RCT responded on May 26, 2004, with a letter stating that it would respond to OSM's concerns at a later date.

TX-053. On June 9, 2004, OSM received a proposed program amendment from RCT to revise its rules on annual fees. OSM announced the proposed amendment and opened a public comment period on July 19, 2004. OSM sent a letter to RCT on July 26, 2004, asking for more information about the amount of the proposed fee increase.

V. Success in Achieving the Purposes of SMCRA as Measured by the Number of Observed Off-Site Impacts and the Number of Acres Meeting the Performance Standards at the Time of Bond Release

To further the concept of reporting end results, the findings from performance standard evaluations and public participation evaluations are being collected for a national perspective in terms of the number and extent of observed off-site impacts and the number of acres that have been mined and reclaimed which meet the bond release requirements for the various phases of reclamation. Individual topic reports are available in TFO which provide additional details on how the following evaluations and measurements were conducted.

A. Off-Site Impacts

The number of mine sites that cause no off-site impacts is one of OSM's annual measures of a State program's effectiveness. An off-site impact is defined as a negative regulated effect on people, land, or water outside of areas that have been permitted to be disturbed by coal mining and reclamation.

During the evaluation year, TFO reviewed State inspection reports for each permitted operation. In addition, TFO inspected 14 mining and reclamation operations in Texas. On both State and Federal inspections, the inspector determined whether the mining operation had caused impacts outside the areas permitted to be disturbed and included that information in the inspection report. From these State and Federal inspection reports, and from data submitted by the Surface Mining and Reclamation Division of RCT, TFO compiled the numbers, types, and severity of the off-site impacts for the evaluation year.

RCT conducted 242 partial and 120 complete inspections of coal mining and reclamation operations in EY 2004. OSM conducted 14 oversight inspections.

This is a total of 376 inspections or opportunities for observations of off-site impacts. Five off-site impact were observed (See Table 4).

The 5 impacts were recorded on 4 different mines; thus, 17 of 21 (81 percent) permits caused no off-site impacts. The percentage was 95 percent in EY 2003 and 60 percent in EY 2002. Table 4 shows 27 of 31 inspectible units being free of off-site impacts. However, several permits were subdivided into multiple inspectible units in EY 2004. To ensure consistency with previous year's off-site impact reports, TFO used its own inspectible units list which is one unit is equal to a permit.

Three of the off-site impacts involved sediment leaving the permit area with two impacting land and one impacting water. One off-site impact was an acid seep that affected land, and one off-site impact was disturbance in a church buffer zone. The degree of impact of the five off-site impacts was: three were minor, one was moderate, and one was major. The extent of the off-site impacts was: two were reparable and three were irreparable. The problems were considered resolved on four of the impacts and not resolved on 1 of the impacts. The locations of the off-site impacts were: four were within the permit area (but on lands not approved for disturbance) and one was outside the permit area. All of the off-site impacts were identified on RCT's inspections.

Although the percentage of sites causing no off-site impacts decreased from EY 2003, the number of off-site impacts, the number of mines with off-site impacts, and the type, degree, and extent of the off-site impacts did not illustrate any patterns or trends. OSM concluded that RCT has been effective in its inspection and enforcement program to ensure that off-site impacts from mining and reclamation have been minimized.

With three of the off-site impacts involving sediment leaving the site, RCT should look closely at sediment control plans and their implementation to ensure effective protection from sediment being washed from the mining and reclamation operations.

B. Reclamation Success

The number of acres that meet bond release standards is one of OSM's annual measures of a State program's effectiveness. During the EY 2004, TFO monitored bond release applications from the mining operations in the State. TFO participated in three of the bond release inspections, and did not identify any significant problems on those bond releases. TFO found no problems on bond release documentation that it reviewed in EY 2004.

During EY 2004, the bond release acreage was higher for Phases I (+598 acres) and II (+778 acres) and lower for Phase III (-436 acres) than EY 2003 (See Table 5).

The acreage of Phase III bond release is small in comparison with the acreage of land that was mined a number of years ago that should be ready for Phase III release. However, from its oversight inspections, OSM observed that reclamation is current on all mines and many acres appear to have been reclaimed successfully even though bond releases has not been sought. Since EY 2001, RCT has been working with coal mining and reclamation operators to encourage them to seek bond release for areas that are eligible for bond release. RCT instituted a policy that requires a bond release schedule as a part of the reclamation plan. As permits are renewed, revised, and reviewed at midterm, these schedules are being included in existing permits and made a part of new permit applications. TFO concluded that RCT has appropriately implemented its bond release program and ensured successful reclamation.

VI. OSM Assistance

OSM provided financial assistance to Texas in the form of grants, for 50 percent of the operational budget for RCT's activity as the regulatory authority and 100 percent of RCT's activity in AML. RCT has access to and uses equipment provided by OSM for TIPS. OSM presented training on grants to RCT staff in EY 2004.

VII. General Oversight Topic Reviews

A. Mine-Site Evaluation

OSM is required to conduct oversight activities including mine inspections to determine whether RCT has appropriately implemented the approved State coal mining regulatory program. OSM is required to identify how the State program implementation is reflected in on-the-ground conditions.

TFO inspected a sample of mining and reclamation operations, prepared inspection reports, read State inspection reports, and looked for trends and patterns.

During EY 2004, TFO found on-the-ground problems on 6 of the 14 oversight inspections. Most of the problems were minor, some could be repaired during the inspection, and some were scheduled for repair at the earliest possible date. TFO

did not identify any problems that should be cited as violations; thus TFO issued no TDN's.

Few on-the-ground problems resulted from mining and reclamation activities in Texas in EY 2004. RCT has appropriately ensured on-the-ground compliance with the approved State program.

B. Ground Water Monitoring

Many of the recent citizen's complaints in Texas have identified concerns over groundwater issues – either loss or diminution of the quantity of water in wells or reduction in the water quality. To evaluate this further, OSM included a review of groundwater protection as an oversight topic in EY 2003. This study was not completed in EY 2003 and was continued into EY 2004.

TFO reviewed groundwater information and protection plans in a sample of permits. The sample included three of the newest permits, and Alcoa, Inc., Sandow Mine, the mine where there have been a number of citizen's complaints relating to groundwater. One of the three newer permits, Alcoa, Inc., Three Oaks Mine, had citizen's concerns relating to groundwater during the permitting process. During oversight inspections, TFO looked at the on-the-ground implementation of the groundwater protection plans.

All of the permit application packages in the sample contained descriptions of the groundwater regime in the permit and adjacent areas. The data characterized the groundwater that would be encountered during mining and reclamation including quantity and quality. RCT's evaluation of the groundwater information, as shown in its technical analysis document and written findings for permit approval, illustrates that the information appropriately described the groundwater resource.

All of the permit application packages in the sample include plans for dewatering the overburden ahead of mining. These plans call for drilling wells, pumping water from the wells, and discharging the water into local streams. These actions will impact groundwater by lowering the water table and increasing the flow of the receiving streams during these dewatering operations, but these impacts are shown in the permit application packages to be temporary impacts.

All of the permit application packages in the sample contain plans for monitoring the groundwater in wells surrounding the mining and reclamation operation. There are also wells in the reclaimed land to monitor the groundwater recharge. RCT's evaluation of the groundwater monitoring plans, as shown in its technical analysis document and written findings for permit approval, illustrates that the plans appropriately provide for determining the impact of the mining and reclamation on the groundwater.

On its 14 oversight mine-site evaluations, TFO found that groundwater monitoring data had been collected and reported as required on all permits that were inspected. TFO also found that the monitoring wells were in place and had been constructed according to the permit plans and were designed and constructed to allow monitoring and to protect groundwater from contamination.

RCT's permit reviews, mine-site evaluations, and citizen's complaint investigations all followed the groundwater protection requirements of the approved State program and ensured that groundwater resources were appropriately protected during mining and reclamation operations in Texas.

C. Surface Water Monitoring

During EY 2003, OSM discovered on oversight inspections that some Texas coal mining and reclamation operations were not monitoring each surface water discharge point separately. Upon investigation, TFO found that TCEQ, the agency with State primacy over water quality, had allowed changes in the TPDES permits on mining operations to combine point source discharge samples and analyze the composite sample. TFO sent a TDN to RCT on this issue because 40 CFR 434 requires analysis of each discharge point, and 40 CFR 434 has been incorporated into Federal and State surface mining regulations. Some of the TPDES permits on Texas mines contain this conflicting sampling requirement. On August 22, 2003, EPA stated in a letter to TCEQ that each outfall must be sampled separately. On September 5, 2003, RCT sent letters to permittees requiring compliance with the EPA's August 22, 2003 letter.

TFO evaluated surface water monitoring on its 14 oversight inspections in EY 2004. TFO found that all Texas mines are sampling each water discharge outfall separately as required by 40 CFR 434. However, several Texas mine operators have requested that the TPDES permits not be changed until the matter has been resolved between TCEQ and EPA. RCT has appropriately responded to the issue. TFO understands that the Texas mine operators and TCEQ are not satisfied and plan to continue discussions on the issue.

TFO and RCT will continue to be involved in the discussions until the issue is resolved.

D. Soil Stabilization

In EY 2003, TFO identified erosion control as a concern. With the potential

for topsoil loss even though the sediment from the erosion was contained through the sedimentation control systems, TFO began looking closely at topsoil stabilization plans and implementation.

On TFO's 14 oversight inspections in EY 2004, where erosion was noted, TFO reviewed the approved soil replacement and stabilization plans. TFO observed more than minor erosion on only 2 of the 14 mines inspected. On those 2 mines, repair was either underway or scheduled as soon as conditions would allow, thus the erosion was not considered a violation. However, in both cases, topsoil substitute material had been graded to its final configuration after which it must be treated as topsoil. This meant that topsoil had been displaced and lost from the specific area.

TFO reviewed the permit application packages for the two permits on which topsoil stabilization was a problem: TXU Mining, Oak Hill Mine, Permit No. 46B, and Sabine Mining Company, South Hallsville Mine, Permit No. 33F. Both include information and plans in the approved permit application packages to stabilize topsoil and control erosion.

The approved permit application packages contains information on the native soils and overburden. The plans include using selective overburden and oxidized materials as a topsoil substitute. The resulting topsoil is generally sandy. The backfilling and grading plans include grading the land to slightly flatter slopes than the original land and creating drainage patterns to prevent erosion. The surface water control plans include slowing drainage of water with control structures, mulching with straw or hay, and establishing temporary and permanent vegetation to control erosion. The revegetation plans include using plant species that can be quickly established and are able to control erosion.

TFO found that acceptable topsoil stabilization had been achieved at the majority of Texas mines. This occurred in a year in which rainfall was heavier than normal. On the two mines where TFO found erosion that resulted in loss of topsoil, TFO’s review showed that the permit approvals for the two mines with topsoil stabilization problems had been based on appropriate soil resource information, topsoil substitution plans, and topsoil stabilization plans. TFO concluded that erosion and the resulting loss of topsoil material was not due to inadequate plans, but resulted from improper implementation of the approved plans. The improper implementation includes creating some slopes that are too steep locally to stabilize the resulting sandy topsoils (although the average slope was flatter than the original land), delaying mulching, and delaying establishing vegetation. The delays allowed a highly erodible topsoil material to remain unprotected for periods of time.

Although topsoil loss has not occurred at all Texas mines, RCT should closely monitor the implementation of the topsoil stabilization plans to ensure that topsoil is not lost and revegetation is not delayed.

E. Approximate Original Contour

Observations of frequent episodes of erosion, the need for drop structures in drainageways, the large numbers of developed water resources in reclaimed land, and the changes in the topography caused by ash disposal on reclaimed land prompted TFO to evaluate the achievement of AOC in Texas.

TFO identified a sample of mines that would cover the range of conditions that affect AOC. On this sample, TFO examined the data pertaining to AOC in approved permit application packages, permit approval documents, and State and Federal minesite evaluation reports.

To compare premining slopes with postmining slopes, TFO computed weighted averages of slopes (in each permit, the slope data were grouped into slope ranges; the midpoint of the range was used as the slope value). The weighted average was calculated by the following formula:

Weighted Average = [(Sum of slope value) (acreage at that slope value)] / total acreage

This value allowed a direct comparison of premining and postmining slopes to determine whether the mining and reclamation caused changes in the slope classes.

TFO visited the mines in the sample to see how AOC had been achieved and how AOC was being accomplished. TFO decided that the AOC definition phrases “closely resemble” and “complementary drainage” could be ascertained visually without taking additional slope and elevation measurements. The sample included seven coal mining and reclamation permits. The following sites were visited in March and April 2004:

TXU Monticello Mine, Permit No. 34D
Sabine Mining Company, South Hallsville Mine, Permit No. 33F
TXU Oak Hill Mine, Permit 46B
TXU Big Brown Mine, Permit No. 3D
Walnut Creek Mining Company, Calvert Mine, Permit No. 27F
Northwestern Resources Mining Company, Jewett Mine, Permit No. 32E
San Miguel Electric Cooperative, San Miguel Mine, Permit No. 11E

Upon receipt of a permit application, RCT's Surface Mining and Reclamation Division reviews the application for compliance with the applicable permitting and performance standards. At the completion of its review, RCT prepares a Technical Analysis Document that describes the proposal, evaluates the proposal, and lists deficiencies that must be corrected before the application can be approved. Following completion of the application review including correction of the deficiencies, RCT prepares the required written findings affirming that the application meets all requirements.

In each permit included in the AOC oversight review sample, RCT documented its evaluation of the permit application illustrating how the application met the backfilling and grading requirements. RCT also documented how the premining and postmining slope analysis of each application indicated that AOC requirements would be met. This evaluation and analysis allowed RCT to make the required written findings for each permit before it was approved.

The only areas that do not closely resemble the unmined lands that were identified in this review pertained to permanent impoundments, ash disposal areas, and boxcut spoil disposal areas, and straighter drainages with drop structures:

Permanent Impoundments

There were a large number of permanent impoundments on three of the seven permits included in the oversight sample. The large number of permanent impoundments is a concern because the material from final pits that are left as a permanent impoundment has been placed somewhere else, which causes higher elevations and steeper slopes. Likewise, impoundments created by leaving low spots during reclamation can also cause higher elevations and steeper slopes. The overall effect of excessive use of permanent impoundments is that the final topography does not closely resemble the original contour. Another concern is that impoundments can reduce water flow, which could impact downstream water users especially during dry periods.

The definition of AOC allows permanent impoundments if they support the primary postmining land use or are justified as a separate postmining land use. A separate study would be necessary to evaluate whether all of the impoundments are needed to support the primary postmining land uses or could be justified as developed water resources unrelated to the primary postmining land use.

Ash Disposal Areas

Two of the seven permits in the sample had significant ash disposal operations. On one, the ash was placed in mine pits throughout much of the mine. There was no noticeable change in the elevation or steepness of slopes. The other ash disposal area covered about 1,000 acres and raised the elevation of that area about 60 feet. The edges of the ash disposal area are steeper than the remainder of the mine slopes.

Boxcut Spoil Disposal Areas

Boxcut spoil disposal areas are routinely allowed because there is often no economical way to move the material from the first pit to the last pit. This leaves a permanent spoil pile that changes the elevation and steepness where the mining begins in an area. Six of the seven permits in the sample had boxcut spoil disposal areas. Generally these had been graded to blend with the surrounding topography, but they were particularly noticeable on two of the permits.

Drainage Patterns

The reclaimed drainage patterns are generally straighter than the drainage patterns in unmined land. The side slopes of the reclaimed drainageways are more gentle than natural streams. Several mines used drop structures in the drainages to slow the water and reduce erosion. Using these structures allowed the construction of straighter drainage patterns, which do not always resemble the surrounding drainage patterns.

OSM found that RCT has required appropriate information in permit applications, evaluated the information appropriately, and made appropriate written findings that AOC requirements would be met by coal mining and reclamation operations in Texas. However, the topography changes that result from allowing large numbers of permanent impoundments, boxcut spoil disposal areas, straighter drainage patterns, and ash disposal weaken the application of the concepts of “closely resembles” and “blends into” the premining and surrounding topography. These concepts are central to achievement of AOC. Considering the large acreage that has been mined and reclaimed, the acreage in these "deviations" from AOC is not large. OSM does not perceive a programmatic problem with AOC.

OSM recommends that RCT look more closely at the justifications for and effects of permanent impoundments, permanent boxcut spoil piles, drainage plans that require drop structures, and ash disposal.

Appendix A: Tabular Summaries of Data

These tables present data pertinent to mining operations and State and Federal regulatory activities within Texas. They also summarize funding provided by OSM and Texas staffing. Unless otherwise specified, the reporting period for the data contained in all tables is July 1, 2003, to June 30, 2004. Additional data used by OSM in its evaluation of Texas' performance is available for review in the evaluation files maintained by the Tulsa Field Office.

Appendix B: State Comments on Report